



Chesterfield County, Virginia

Memorandum

DATE: September 25, 2007

TO: Chesterfield County Planning Commission

Thru: Kirkland A. Turner, Director of Planning

FROM: Richard M. McElfish, Environmental Engineering Director

SUBJECT: Work Session on the USR Watershed Ordinance Amendments to Decrease Impervious and Increase Pervious Areas

It is recognized that in the Upper Swift Creek Reservoir Watershed the development community needs additional tools to help them meet the stricter requirements. The first step of this process was to look at existing county ordinances which hinder the development community's ability to be creative in the use of Low Impact Development techniques (LID), and create more natural areas.

To begin the process of receiving input, separate meetings were held with eight different groups. Those groups are as follows:

Developers	Builders	EE Review Engineers	Site Plan Team
Engineers	Environmental/HOA Group	Zoning Team	Subdivision Team

The comments were then reviewed, condensed as to duplicates or partial duplicates, grouped as to a policy or ordinance. These suggestions were then reviewed and ordinance amendments prepared that apply to the Upper Swift Creek Reservoir Watershed only.

These draft ordinances were then presented to the combined group of developers, engineers, builders and Environmental/HOAs who had input on August, 2007 and again presented at the Community Development Quarterly meeting in September, 2007. At both meetings all attendees were encouraged to e-mail Environmental Engineering any of their comments in relation to the draft amendments.

The attached ordinances are the outcome of the process. The attached draft amendments are not all inclusive and over time additional amendments may come forward. A synopsis of the changes follows which is then followed by the complete draft amendments:

Sec. 8-6(e). Erosion and sediment control plans.

Strengthens the County's ability to require extra erosion and sediment control in the Upper Swift Creek.

Sec. 17-76(j). Arrangement.

Requires lots with average frontages greater than 90 foot to use roadside ditches in the watershed.

Sec. 17-70(g). Buffers and Special setbacks.

These are increases in setbacks on non-frontage streets:

Limited access	200 to 240 feet
Major arterials	50 to 60 feet
Collector roads	35 to 40 feet
Residential collectors	30 to 35 feet

Sec. 19-58a(6). Floodplain regulations.

Changes 25 foot setbacks for structures to 30 foot setbacks from all environmental features. (Floodplains, Wetlands and RPAs).

Sec. 19-58a(7). Floodplain regulations.

Requires a setback for all non residential structures to be set back 25 feet horizontal from the 100y ear floodplains, wetlands and RPAs. This can be reduced to 5 feet if LID is implemented adjacent to these areas.

Sec. 19-238(d)1b. Development regulations.

Requires re-development sites, not currently served by BMPs to reduce pollutants by 30%.

NOTE: Cannot be lower than currently required.

Sec. 19-238(d)1c. Development regulations.

Requires re-development sites currently served by a BMP to reduce pollutants by 20%.

NOTE: Cannot be lower than currently required.

Sec. 19-238(d)2b. Development regulations.

States that even vested properties will comply with the CBPA on site.

Sec. 19-238(e). Development regulations.

Requires all zoning applications in the Upper Swift Creek to submit a natural resource inventory (NRI) at time of zoning.

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Sec. 19-301. Definitions.

- Low Impact Development
- Transaction Screen

Sec. 19-514(d)(1). Design standards for off-street parking.

Allows raised bumper blocks to be substituted for curb and gutter in conjunction with the use of low impact development practices.

Sec. 19-514(d)(1). Design standards for off-street parking.

All parking spaces identified as in excess of the minimum requirements shall be considered over flow parking and shall be of a pervious surface.

Sec. 19-519(a). Landscaping standards for surface parking areas.

Interior landscaping for each space will increase from 30 to 40 square feet.

Sec. 19-521(g). General provisions for buffers and screening.

Buffers may contain BMPs in the Upper Swift Creek, provided they are not adjacent to residential uses.

Sec. 19-593(f). Yard requirements for office, business and industrial districts within emerging growth areas.

These are increases in setbacks on non-frontage streets:

Limited access	200 to 240 feet
Major arterials	50 to 60 feet
Collector roads	35 to 40 feet
Residential collectors	30 to 45 feet

Attachments

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AN ORDINANCE TO AMEND THE CODE OF THE COUNTY OF CHESTERFIELD, 1997, AS AMENDED, BY AMENDING AND RE-ENACTING SECTION 8-6 OF THE EROSION AND SEDIMENT CONTROL ORDINANCE, SECTIONS 17-70 AND 17-76 OF THE SUBDIVISION ORDINANCE AND SECTIONS 19-58, 19-238, 19-301, 19-514, 19-519, 19-521 AND 19-593 OF THE ZONING ORDINANCE RELATING TO DESIGN AND WATER QUALITY STANDARDS IN THE UPPER SWIFT CREEK WATERSHED

BE IT ORDAINED by the Board of Supervisors of Chesterfield County:

(1) *That Sections 8-6, 17-70, 17-76, 19-58, 19-238, 19-301, 19-514, 19-519, 19-521 and 19-593 of the Code of the County of Chesterfield, 1997, as amended, are amended and re-enacted to read as follows:*

Chapter 8

EROSION AND SEDIMENT CONTROL

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Sec. 8-6. Erosion and sediment control plans.

(e) For construction sites that are adjacent to sensitive environmental features such as RPAs, wetlands and floodplains, the approved plan may incorporate additional measures required by the environmental engineer to adequately prevent sediment from entering those resources. In addition, the environmental engineer will require additional measures other than the minimum standards contained in the Virginia Erosion and Sediment Control Handbook if he determines that such measures are necessary for protection of sensitive environmental features and/or water resources within the Upper Swift Creek Watershed.

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Chapter 17

SUBDIVISION OF LAND

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Sec. 17-70. Buffers and special setbacks.

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- (c) Buffers of the following minimum width shall be provided adjacent to existing and proposed streets with the following classifications:
- (1) Arterial streets--50 feet.

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- (2) Collector streets--35 feet.
- (3) Residential collector streets--30 feet.
- (4) Local streets to negate double frontage condition--20 feet.
- (d) Adjacent to limited access streets, a setback distance of 200 feet, exclusive of required yards, shall be provided from the limited access street right-of-way, unless a noise study demonstrates that a lesser distance is acceptable as approved by the director of transportation. Natural vegetation shall be retained within the setback area unless removal is required to install noise attenuation measures or is approved by the planning commission.
- (e) Setbacks from temporary turnarounds easements shall conform to permanent cul-de-sac right-of-way standards.
- (f) A minimum setback for all structures of 20 feet shall be provided from any petroleum product transmission pipeline easement or 35 feet from the pipeline whichever is greater.
- (g) Setbacks in the Upper Swift Creek Watershed: Within the Upper Swift Creek Watershed all buildings, drives and parking areas shall have a minimum setback of 240 feet from limited access roads, 60 feet from major arterials, 40 feet from collector roads and 35 feet from residential collector roads. This subsection shall apply only to tentative subdivision plats approved after [date of ordinance amendment] and shall be clearly indicated on subsequent record plats.

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Sec. 17-76. Arrangement.

(j) Curb and gutter shall be required on all local streets in all subdivisions, where the average lot has less than 100 feet of street frontage. In the Upper Swift Creek Watershed, roadside ditches shall be required on all local streets in all subdivisions where the average lot has 90 feet or more of street frontage. These calculations excludes those lots fronting on the radial terminus of a cul-de-sac. Curb and gutter installation may be waived, in whole or in part, by the director of planning or planning commission to preserve the existing neighborhood local street drainage method.

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Chapter 19

ZONING

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Sec. 19-58. Floodplain regulations.

a. *General provisions.*

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- (6) All new construction and substantial improvements of residential dwellings adjacent to the base flood area/backwater shall be set back at least 25 feet horizontal distance from the outermost boundary of the base flood area/backwater and have a minimum floor level of 12 inches above the base flood elevation. In the Upper Swift Creek Watershed, all new construction and substantial improvements of residential dwellings shall be set back at least 30 feet horizontal distance from the outer most boundary of the base flood area/backwater, wetlands and Resource Protection Areas.
- (7) All new construction and substantial improvements of nonresidential structures and accessory buildings within the floodway fringe shall either: have a minimum floor level of 12 inches above the base flood elevation; or together with attendant utility and sanitary facilities, be designed to be watertight at least 12 inches above the base flood elevation with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. In the Upper Swift Creek watershed all new construction and substantial improvements of nonresidential structures and accessory buildings shall be located outside the floodway fringe and shall be set back at least 25 feet horizontal distance from the outermost boundary of the base flood area, wetlands and Resource Protection Areas provided, however, that when Low Impact Development practices are used adjacent to wetlands, floodplains and Resource Protection Areas the setback may be reduced to 5 feet.

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Sec. 19-238. Development regulations.

Any use, development or redevelopment of land in the Upper Swift Creek Watershed shall meet the following performance criteria:

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- (d) (1) Stormwater runoff shall be controlled to achieve the following:
- a. For any new use or development, the post-development, nonpoint-source pollution runoff loads of phosphorous and lead shall not exceed the following:
 - (i) Phosphorus:
 - 1. The post-development total phosphorus load for residential uses located in areas identified in the Midlothian Area Community Plan for low density residential (1.01 to 2.0 units per acre), in the Route 288 Corridor Plan for Residential (1 to 2.0 dwellings per acre), and in the Upper Swift Creek Plan for single family residential (2.0 units/acre or less), shall not exceed 0.22 pounds per acre per year.
 - 2. The post-development total phosphorus load for all other uses shall not exceed 0.45 pounds per acre per year.
 - (ii) Lead:
 - 1. The post-development total lead load for nonresidential uses and residential uses at a density greater than 2.0 units per acre located in areas identified for such uses in the comprehensive plan shall not exceed 0.19 pounds per acre per year.
 - 2. The post-development total lead load for all other uses shall not exceed 0.03 pounds per acre per year.
 - b. For redevelopment sites not currently served by water quality best management practices, the existing nonpoint-source pollution runoff loads of phosphorus and lead shall be reduced by at least ten percent after redevelopment and, in the Upper Swift Creek Watershed, runoff loads shall be reduced by thirty percent after redevelopment; however, the loads of such elements need not be reduced below the levels set forth in subsection (d)(1)a.
 - c. For redevelopment sites currently served by water quality best management practices, the post-development, nonpoint-source pollution runoff loads of phosphorus and lead shall not exceed the existing loads or the loads set forth in subsection (d)(1)a, whichever are greater. In the Upper Swift Creek Watershed, the post-development, nonpoint-source pollution runoff loads of phosphorus and lead shall be reduced by at least twenty percent; however, the loads of such elements need not be reduced below the levels set forth in subsection (d)(1)a.

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- (2) Compliance with the requirements of subsection (d)(1) shall be achieved on site through incorporation of best management practices including Low Impact Development practices that achieve the required control, unless the director of environmental engineering determines that one of the following storm water management options has been satisfied.
- a. Mitigation measures approved by the director of environmental engineering in conjunction with the plan approval process. Mitigation measures may include, but are not limited to, the following: (i) construction of BMP's on or off-site, (ii) retrofitting an existing BMP on or off-site, (iii) stream or buffer enhancements or restoration, (iv) purchasing of credits from owners of other property in the watershed when best management practices on the other property exceed the required control, (v) use of perpetual conservation or open space easements, and (vi) if the foregoing mitigation measures are not adequate to achieve the required control, payment to the County of cash sufficient to achieve the required control through other mitigation measures as determined by the director of environmental engineering. Mitigation measures shall be approved by the director of environmental engineering only when: (i) the proposed mitigation measures are located within the Upper Swift Creek Watershed, (ii) the proposed mitigation measures are sufficient to achieve the required control, and (iii) the applicant provides an engineer's certification that there is no viable means of sufficiently achieving the required control on site. Unless otherwise determined by the director of environmental engineering, mitigations measures shall be located in the same subwatershed of the Upper Swift Creek Watershed.
 - b. Property that the director of planning has determined to be vested as to the right to comply with the required control through pro rata payments for regional BMPs pursuant to Article VI of chapter 12 repealed February 14, 2007, shall achieve compliance through (i) a pro rata payment equal to what would have been required under chapter 12, which shall be used for mitigation measures in the watershed as determined by the director of environmental engineering, (ii) compliance with the other provisions of 19-238(d)(2), or (iii) a combination thereof. In any event, however, even vested properties shall achieve a total phosphorus load of 0.45 pounds per acre per year as required by the Chesapeake Bay Preservation Act regulations.
 - c. Compliance with a state or locally implemented program of stormwater discharge permits pursuant to section 402(p) of the federal Clean Water Act, as set forth in 40 CFR 122, 123, 124 and 504, dated December 7, 1988.

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- d. For a redevelopment site that is completely impervious as currently developed, restoring a minimum of 20 percent of the site to vegetated open space.
- (e) Every application for a rezoning, conditional use, conditional use planned development, and conditional zoning in the Upper Swift Creek Watershed shall include a natural resource inventory for the proposed development site except as set forth below. The purpose of the natural resource inventory is to determine the environmental features that should be protected due to sensitivity to developmental impacts.
 - (1) The following development projects are exempt from the requirement to provide a natural resource inventory:
 - a. Any disturbance less than an area of 2,500 feet;
 - b. Single family residential dwelling that is not part of a subdivision; and
 - c. Construction of water, sewer, natural gas, underground telecommunications and cable television lines, railroads, or public roads.
 - (2) The natural resource inventory shall be drawn to scale clearly delineating the following components:
 - a. Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow;
 - b. A 100-foot buffer area located adjacent to and landward of the components listed in item a. above, and along both sides of any water body with perennial flow;
 - c. Nontidal wetlands not included in item a. above;
 - d. 100-year floodplains as designated in section 19-57;
 - e. Slopes 25 percent or greater;
 - f. Hydrologic soil groups;
 - g. Threatened and endangered species;
 - h. Transaction screen;
 - i. Greenways;

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- j. Abandoned or existing mines or quarries;
 - k. Historical, archeological, or cultural features; and
 - l. Any other sensitive environmental feature specific to the site.
- (3) A narrative describing the location, density, plant species and condition of the vegetation on the site shall be provided with the natural resource inventory.
- (4) The natural resource inventory shall be certified as complete and accurate by a person or firm qualified to make the inventory.
- (f) The use of Low Impact Development site planning and practices shall be encouraged to reduce pollutants and control stormwater runoff at the source.
- (1) The design criteria, hydrologic analysis, and calculation procedures for LID practices shall be as published by the Chesterfield County, Department of Environmental Engineering.
- (2) Storm drainage easements shall be recorded to identify locations of LID practices on lots or parcels. The property owner shall not remove or alter the function of LID practices without prior written approval from the director of environmental engineering.
- (e g) If the best management practices that are used require regular or periodic maintenance in order to continue their functions, maintenance shall be ensured by a maintenance/easement agreement, bond or other assurance satisfactory to the director of environmental engineering; and
- (f h) Land on which agricultural activities are being conducted shall have a soil and water quality conservation plan approved by the James River Soil and Water Conservation District. Such plan shall be based on the Field Office Technical Guide of the U.S. Farm Service Agency Soil Conservation Service and accomplish water quality protection consistent with this section.

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Sec. 19-301. Definitions.

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For the purposes of this chapter, the following words and phrases shall have the following meanings:

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Low Impact Development or LID: A design strategy with the goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic site design. Hydrologic functions of storage, infiltration and ground water recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed micro-scale stormwater retention and detention areas, reduction of impervious surfaces, and the lengthening of runoff flow paths and flow time. Other strategies include the preservation/protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, valuable (mature) trees, flood plains, woodlands, and highly permeable soils.

Transaction Screen: A standardized approach to environmental due diligence that provides a generally acceptable degree of confidence about the environmental condition of the property. The study includes a search of governmental databases and a review of regulatory agency records describing any detailed environmental investigations which may have occurred on the property. It also includes a questionnaire concerning the environmental history of the property and a site visit to observe site conditions on and around the property.

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Secs. 19-514. Design standards for off-street parking.

(d) Surface treatment.

- (1) With the exception of: (i) single-family residential and farm uses; (ii) areas where track-mounted equipment is stored or displayed; (iii) property in 1-2 and 1-3 Districts; (iv) areas for the storage of customer vehicles in motor vehicle storage/towing lots; or (v) unpaved overflow parking areas, driveways and parking areas shall be paved with concrete, bituminous concrete or other similar material. Except in 1-2 and 1-3 Districts, surface-treated parking areas and drives shall be prohibited. Areas where track mounted equipment is stored or displayed and areas for the storage of customer vehicles in motor vehicle storage/towing lots shall have a minimum surface of six inches of No. 21 or No. 21A stone.

Except as detailed in the Environmental Engineering Department's Reference Manual, concrete curb and gutter shall be installed around the perimeter of all paved driveways and parking areas. Other curbing material of similar quality, such as brick or cobblestone, may be permitted through site or schematic plan review. In the Upper Swift Creek Watershed, raised bumper blocks may be substituted for curb and gutter when Low Impact Development practices are used and water is sheet flowing. Drainage shall be designed so as not to interfere with pedestrian traffic.

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In the Upper Swift Creek Watershed, all parking spaces identified as in excess of the minimum requirements as set forth in 19-513 shall be considered as overflow parking and shall be of a pervious surface as specified in 19-514 d (5).

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Sec. 19-519. Landscaping standards for surface parking areas.

- (a) Quantity: Any paved parking area shall have at least 30 square feet of interior landscaping for each space, except that in the Upper Swift Creek Watershed there shall be 40 square feet of interior landscaping for each space. Each required landscaped area for large deciduous trees shall contain a minimum of 250 square feet and have a minimum dimension of at least 15 feet at the location of a tree. Each required landscaped area for small deciduous trees shall contain a minimum of 150 square feet and have a minimum dimension of at least nine feet at the location of a tree. Continuous planting islands for large or small deciduous trees of at least 600 square feet in size shall have a minimum dimension of nine feet. A maximum of ten percent of the required area may be in smaller areas if approved through site or schematic plan review.

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Secs. 19-521. General provisions for buffers and screening.

- (g) The only uses permitted by right in buffers shall be landscaping and screening as permitted herein; however, signs; security fencing; utilities which run generally perpendicular through the buffer; pedestrian walkways; or similar uses may be permitted through subdivision, site or schematic plan review, provided that the uses are consistent with the purposes stated in 19-520 are maintained. Further, in the Upper Swift Creek Watershed buffers may contain BMPs provided that the buffers are not adjacent to residential uses.

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Sec. 19-593. Yard requirements for office, business and industrial districts within emerging growth areas.

- (a) *Setbacks along major arterials excluding limited access roads:* All buildings, drives and parking areas shall have a minimum 75-foot setback from the proposed rights-of-way of major arterials, excluding limited access roads, as indicated on the comprehensive plan. However, in an I-3 District, building setbacks shall be increased to 90 feet. Within these setbacks, landscaping shall be provided in accordance with perimeter landscaping B.
- (b) *Front and corner side yards:* The front and corner side yard setback for buildings, drives and parking areas shall be a minimum of 40 feet from public rights-of-way, other than major arterials and limited access roads. However, in an I-2 District,

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building setbacks shall be increased to 60 feet, and in an I-3 District, building setbacks shall be increased to 90 feet, with the installation of perimeter landscaping A.

- (c) *Side yards:* The side yard setbacks for buildings, drives and parking areas shall be a minimum of 30 feet with the installation of perimeter landscaping A. However, within I-2 and I-3 districts, when adjacent to I-2 or I-3 districts, perimeter landscaping within side yards shall not be required. One foot shall be added to each side yard for each one foot that the building height adjacent thereto exceeds 45 feet.
 - (d) *Setbacks along limited access roads and rear yards:* The minimum rear yard setback for buildings, drives and parking areas and any yard adjacent to a limited access road shall be 40 feet with the installation of perimeter landscaping C. However, within I-2 and I-3 districts, when adjacent to I-2 or I-3 districts, perimeter landscaping within rear yards shall not be required. One foot shall be added to each rear yard for each one foot that the building height adjacent thereto exceeds 45 feet.
 - (e) *Yards for gasoline pumps:* The setbacks for gasoline pumps and drives serving gasoline pump islands shall be the same as required in this section for buildings and drives.
 - (f) *Setbacks in the Upper Swift Creek Watershed:* Within the Upper Swift Creek Watershed all buildings, drives and parking areas shall have a minimum setback of 240 feet from limited access roads, 60 feet from major arterials, 40 feet from collector roads and 35 feet from residential collector roads. This subsection shall apply only to site plans and schematic plans approved after [date of ordinance amendment].
- (2) *That these ordinances shall become effective immediately upon adoption.*